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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,348	12/03/2003	Mohamed K. Diab	MLABS.021A	5470

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EXAMINER

BUI, BRYAN

ART UNIT PAPER NUMBER

2863

DATE MAILED: 03/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

CT

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/727,348		DIAB, MOHAMED K.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Bryan Bui		2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 December 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-10 is/are allowed.
- 6) ☒ Claim(s) 11-14, 16 and 17 is/are rejected.
- 7) ☒ Claim(s) 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>120303;52104</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

1. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because figure 11 with characteristic of lines, numbers and letters not uniformly thick and well defined, and poor line quality. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 17, Applicant claimed "a method of modifying a real signal representing an optical signal attenuated by tissue to determine a characteristic of the tissue..". However, receiving step and converting step do not define anything at all to the applicant regards in the preamble. Correction is required.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 11 and 17 are rejected under 35 U.S.C. 102(a) as being anticipated by Hanna (US20030073890A1).

With respect to claim 11, Hanna teaches a method of determining a measure of a patient's blood oxygen saturation comprising receiving data corresponding to a plurality of photoplethysmographs (paragraph 0002); encoding each of the plurality of photoplethysmographs as a complex signal and combining the plurality of complex signals into complex numbers (paragraphs 0011, 0036), and determining a measure of a patient's blood oxygen saturation from the complex numbers (paragraphs 0011, 0036, 0044, 0047 figures 2, 3A-B).

With respect to claim 17, a technique provided above further discloses a method of modifying a real signal representing an optical signal attenuated by tissue to determining a characteristic of the tissue including receiving a pulse oximeter a real

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signal and converting the real signal into complex domain (paragraphs 0002, 0011, 0036, figures 2, 3A-B).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 12-14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanna (US20030073890A1) in view of Carim et al (US 5,553,615).

With respect to claims 12-14 and 16, Hanna discloses the features of claimed invention as set forth in the rejection above, except mention determining a measurement of confidence for each value of the complex numbers, filtering the complex numbers based on the measurement of confidence, having correlation value, and applying statistical analysis to the complex numbers. Carim et al teach a method using photoplethysmography techniques and data processing to determine the oxygen saturation (abstract) including a measurement of confidence value of the complex number (column 13, lines 40-48) comprises filtering the complex numbers based on the measurement of confidence, having correlation value, and applying statistical analysis to the complex numbers (column 11, line 46 to column 12, line 9). It would have been obvious to one of ordinary skill in the art to modify Hanna's teachings to include a measurement of confidence value of the complex number (column 13, lines 40-48)

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comprises filtering the complex numbers based on the measurement of confidence, having correlation value, and applying statistical analysis to the complex numbers (column 11, line 46 to column 12, line 9) as taught by Carim et al to make a system more accurate in determining a patient's blood oxygen saturation.

***Allowable Subject Matter***

5. Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

Claims 1-10 are indicate allowable over the prior art of record because the prior art does not teach or suggest the claimed combination as recited, particularly in combination with other limitations of claim in determining ratios of the first modified signal to the second modified signal and calculator which use one or more calibration curves and the ratios to determine output values of one or more physiological parameters of the patient.

In combination as claimed, wherein the measurement of confidence comprises a value of an associated phase (claim 15) is not discloses, suggest in the prior art of record.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bryan Bui whose telephone number is 571-272-2271. The examiner can normally be reached on M-Th from 7am-4pm, and Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Barlow can be reached on 571-272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BB

3/3/05

**BRYAN BUI**  
**PRIMARY EXAMINER**

